

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A focus detecting device for a microscope, comprising:

a light source;

a partially light-introducing member that causes only a part of a light beam from the light source to enter the microscope;

a light-condensing optical system that condenses a light beam reflected from a sample surface of the microscope;

a photodetector disposed at a light convergence position of the light-condensing optical system and having at least two light-receiving sections, the photodetector being disposed on an exit side of the light-condensing optical system; ~~and~~

a multi-beam producing member disposed in a path of light from the light source to the photodetector and producing a plurality of light beams, which pass the multi-beam producing member to converge on a plurality of spots on the photodetector; and

a focusing-state calculator that calculates a focusing state of the microscope based on output signals from the photodetector;

wherein the sample is irradiated with the plurality of light beams.

2. (Original) A focus detecting device for a microscope according to claim 1, wherein the partially light-introducing member is a light-intercepting member that intercepts a beam of light from the light source.

3. (Currently Amended) A focus detecting device for a microscope according to claim [[2]] 1, wherein the multi-beam producing member is a first crystal plate.

4. (Original) A focus detecting device for a microscope according to claim 3, further comprising a quarter-wave plate disposed on an exit side of the first crystal plate.

5. (Original) A focus detecting device for a microscope according to claim 4, further comprising a second crystal plate disposed on an exit side of the quarter-wave plate.

6. (Original) A focus detecting device for a microscope according to claim 5, further comprising a diffuser disposed on an exit side of the light source, to diffuse rays from the light source.

7. (Currently Amended) A focus detecting device for a microscope according to claim 2 1, wherein the light source is constructed as a surface-illuminant laser diode having a plurality of radiant points so that arrangement of the multi-beam producing member is dispensable.

8. (Original) A focus detecting device for a microscope according to claim 7, further comprising at least one of a diffraction grating and a crystal plate as the multi-beam producing member.

9. (Original) A focus detecting device for a microscope according to claim 7, further comprising a diffuser disposed on an exit side of the light source, to diffuse rays from the light source.

10. (Original) A focus detecting device for a microscope according to claim 1, wherein the partially light-introducing member is formed by the light source arranged to be decentered from an optical axis of the microscope.

11. (Currently Amended) A focus detecting device for a microscope, comprising:
a beam-splitting member having a surface from which or through which an incident light beam is reflected or transmitted and is disposed at an intersection of an optical axis of a first path of light and an optical axis of a second path of light;

a light source disposed in the first path of light;

a multi-beam producing member disposed between the light source and a sample, to produce a plurality of light beams;

a light-condensing optical system disposed in the second path of light on an exit side of the beam-splitting member, to condense the plurality of light beams passing the beam-splitting member;

a photodetector disposed in the second path of light at a light convergence position of the light-condensing optical system and provided with at least two light-receiving sections, the photodetector being disposed on an exit side of the light-condensing optical system so that the plurality of light beams passing the multi-beam producing member converge on a plurality of spots on the photodetector; ~~and~~

a light-intercepting member disposed between the light source and the photodetector, to intercept a part of light beams passing there; and

a focusing-state calculator that calculates a focusing state of the microscope based on output signals from the photodetector.

12. (Original) A focus detecting device for a microscope according to claim 11, wherein the light-intercepting member is disposed between the beam-splitting member and the light-condensing optical system.

13. (Original) A focus detecting device for a microscope according to claim 11, wherein the multi-beam producing member is disposed between the beam-splitting member and an objective lens of the microscope.

14. (Previously Presented) A focus detecting device for a microscope according to claim 1, wherein the light-condensing optical system comprises a lens element that condenses the plurality of light beams in such a manner that each of the plurality of spots on the photodetector has a shorter diameter in a direction in which the spots are aligned than a diameter in a direction perpendicular to the direction in which the spots are aligned.

15. (Previously Presented) A focus detecting device for a microscope according to claim 11, wherein the light-condensing optical system comprises a lens element that condenses the plurality of light beams in such a manner that each of the plurality of spots on the photodetector has a shorter diameter in a direction in which the spots are aligned than a diameter in a direction perpendicular to the direction in which the spots are aligned.